

SAN DIEGO BAY COUNCIL

A coalition of San Diego environmental organizations dedicated to protection and restoration of San Diego's coastal water resources.

March 8, 2005

Chairman John Minan and Regional Board Members
California Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, California 92123-4340

**RE: San Diego Bay Council Comments on NPDES Nos. CA0108073 and CA0108181,
Tentative Orders No. R9-2005-0005 and R9-2005-0006, Southern California Edison San
Onofre Nuclear Generating Stations (SONGS) Units 2 and 3**

Dear Chairman Minan and Board Members:

San Diego Bay Council ("Bay Council") and its member organizations: Sierra Club, San Diego Chapter; Environmental Health Coalition; San Diego BayKeeper; The Surfrider Foundation, San Diego Chapter; and the Alliance for Nuclear Responsibility, are writing to submit our comments on Tentative Orders No. R9-2005-0005 and R9-2005-0006. As this Board is aware, Bay Council has taken a strong interest in permits, such as this, that are issued to power plants and facilities that utilize significant amounts of seawater for cooling purposes (i.e. South Bay Power Plant).

The SONGS Units 2 and 3, in combination draw in 2.4 billion gallons of seawater (over four times the amount permitted for South Bay Power Plant – 600 mgd) per day to cool the steam condensers used to generate 2,174 megawatts of total power. Unlike the SBPP, the steam generators often operate for up to 24 hours continuously, leading to continuous and longer enduring impacts. The cooling water is discharged back into the ocean at a temperature 25 above the intake temperature. The intake and discharges are clustered together in shallow coastal waters, ten to twenty meters in depth. As a result, the environmental impacts to the marine ecosystem are massive. While mitigation measures have been undertaken to minimize these impacts, it is still incumbent on the Tentative Orders to specify the waste discharge requirements and monitoring program for these two generating stations to assure compliance with the state and federal clean water regulations. Furthermore, these two orders should be prepared in a clear and concise manner that can be understood by informed public stakeholders. Our review finds that these two Tentative Orders fail to meet these criteria.

Given the short period to comment on this large and complex permit, Bay Council has organized its comments into a list that is generally divided into four categories:

1. Orders Fail to Comply with 316(b) of the Clean Water Act
2. Orders Contain Significant Flaws in Waste Discharge Requirements
3. Orders Contain Significant Gaps in Information, Need for Clarification/Specificity
4. Orders Fail to Adequately Require Sufficient Monitoring
5. Separation of Orders for Each Unit Fails to Adequately Demonstrate Cumulative Impacts

Unless specified, all the comments refer to both Tentative Orders for Units 2 and 3.

I. Orders Fail to Comply with 316(b) of the Clean Water Act

The Tentative Orders fail to demonstrate compliance with 316(b) ("Phase II Rules") of the Clean Water Act. Under Phase II rules, existing facilities must establish entrainment and impingement performance standards for intake structures. These performance standards include reducing impingement mortality of all life stages of fish and shellfish by 80-95 percent from the calculation baseline and reducing entrainment mortality by 60-90 percent from calculation baseline.¹ Nowhere in the Tentative Order, however, is a finding made that states that the discharger meets or fails to meet these requirements.

The last sentence on page E-24 asserts that the Regional Board finds that these Tentative Orders will assure the protection of a balanced indigenous community of shellfish, fish, and wildlife in the receiving waters for discharge from SONGS Units 2 and 3. However, the Findings in each of these two Tentative Orders do not provide any evidence/justification to support this assertion under the requirement of Phase II rules. Furthermore, the Regional Board has not required in prior orders or these new Orders monitoring of benthic infaunal and macrofaunal to determine if the discharges from SONGS Units 2 and 3 will assure protection of a balanced indigenous benthic community.

An EPA review of the SONGS 316(b) demonstration concluded that although the plant incorporated technologies for minimizing adverse environmental impact, operations at SONGS cause adverse environmental impacts to organisms in the cooling water system and to biological populations and communities in the vicinity of the intake and discharge locations for the plant. These effects included mortality of fish, especially losses of millions of eggs and larvae, which are taken into the plant with cooling water.² These results are significant and need to be seriously addressed when determining the renewal permit to mitigate any possible effects.

EPA³ cites the 1993 study by SAIC that the loss of midwater fish species due to direct entrainment at SONGS was between 16.5 and 45 tons per year. In a normal year, an estimated 121 tons of midwater fish (primarily northern anchovy, queenfish, and white croaker) are entrained at SONGS, of which at least 57 percent are killed during plant passage. The fish lost include approximately 350,000 juveniles of white croaker, a popular sport fish; this number represents 33,000 adult individuals or 3.5 tons of adult fish. Within 3 kilometers of SONGS, the density of queenfish and white croaker in shallow-water samples have decreased by 34 and 36 percent, respectively. Queenfish declined by 50 to 70 percent in deepwater samples.⁴

¹ CWA § 316(b); CFR § 125.94(b).

² Environmental Protection Agency, *National Pollutant Discharge Elimination System: Regulations Addressing Cooling Water Intake Structures for New Facilities; Final Rule*, Federal Register, Dec 18, 2001 available at <http://meso.spawar.navy.mil/Newsltr/Refs/66f65255.txt> (last visited Mar. 7, 2005).

³ Federal Register Tuesday, December 18, 2001 Part II 40 CFR Parts 9, 122 et al. page 65264

⁴ Environmental Protection Agency, *National Pollutant Discharge Elimination System: Regulations Addressing Cooling Water Intake Structures for New Facilities; Final Rule*, Federal Register, Dec 18, 2001 available at <http://meso.spawar.navy.mil/Newsltr/Refs/66f65255.txt> (last visited Mar. 7, 2005).

Under 316(b) Phase II regulations, the discharger must demonstrate compliance by choosing one of the five following alternatives:

1. demonstrate that the facility has reduced cooling water intake velocity to .5 feet per second or less;
2. demonstrate that the existing design and construction technologies, operational measures, and/or restoration measures meet the performance standards established by the regulations;
3. demonstrate that the facility has selected design and construction technologies, operational measures, and/or restoration measures that will, in combinations with any existing design and construction technologies, operational measures, and/or restoration measures meet the performance standards established by the regulations;
4. demonstrate that the facility has installed and properly operates and maintains an approved technology; or
5. demonstrate that a site-specific determination of best technology available ("BTA") is appropriate.

The Tentative Orders do not make any findings showing that the discharger has met any of the above compliance alternatives, nor does it require that the discharge develop a work plan to achieve compliance with any of the above alternatives. Instead, the Tentative Order requires the discharger to perform a *Comprehensive Demonstration Study*. Although the need for the Study is clear to collect more data that will characterize the impingement mortality and entrainment as a result of SONGS Units 2 and 3, that does not avoid a finding of non-compliance with Phase II rules.

II. Orders Contain Significant Flaws in Waste Discharge Requirements

A. Waste Discharge Requirements

1. **Page 5. Discharge Prohibitions I.** Add the prohibition that simultaneous chlorination of Units 2 and 3 is prohibited. We are concerned that simultaneous discharge of chlorinated effluent from both units can be greater than the discharge from only one unit. Sufficient lapse of time between the chlorination discharges from the two units should also be required to allow dissipation of the residual chlorine.
2. **Page 8, paragraph (d). Discharge Temperature.** Residual heat states that the discharge temperature shall not exceed the natural temperature of the receiving water by more than 25 degrees F. The discharge delta temperature is in fact measured as the difference between the water temperature of the effluent and the intake to the condenser. (Defined by the SWRCB April 14, 1999) Using the intake and diffuser distance from shore for Unit 3, there is a relatively short distance between the intake and the nearest effluent discharge location, Order No. 9-2005-0006 should address if the intake temperature is higher than the natural receiving water temperature. The exact distance could not be determined, as the Fact Sheet does not provide the location of the Unit 3

intake and distance from the effluent of Unit 3 (or Unit 2). (Also see Comment IV.A.1 in this letter.)

3. **Page 14. Concrete Water Effluent Limitations.** The concrete cutting water effluent water limitations should include limits for settleable solids, trace metals, organic chemicals, and iron.
4. **Page 15. I. Heat Treatment Discharge Specifications.** The Order should explicitly prohibit simultaneous heat treatment of Units 2 and 3. Order should also specify the conditions (such as time and water temperature in the vicinity of the discharge) that must be met before the heat treatment of one of the Units can proceed after the heat treatment of the other Unit has been completed.
5. **Page 17, A. Water Quality Objectives Established by the Thermal Plan.** Define how natural water temperature is obtained for compliance with the Thermal Plan. The reason is that the Order defines natural water temperature for determining the delta temperature as the temperature measured at the intake. In this case, we do not accept the temperature at the intake. The Monitoring and Reporting Program (MRP) does not explicitly define natural temperature. Presumably, the temperatures at Control Stations C22S, F22S, H22S, J22S, and M22S listed on page D-13 of the MRP are to be used to determine the natural temperature. The Order fails to define how the natural temperature is to be determined based on these five control temperatures. Is it the average or the highest or lowest of the five measurements?
6. **Page 18. Chemical Characteristics and Water Quality Objectives for Sediments.** Chemical Characteristics set water quality objectives for sediments. However, the Order fails to require compliance with these objectives by requiring sediment monitoring. Nutrient materials should be monitored (i.e., total nitrogen, biochemical oxygen demand) to verify that they do not cause objectionable aquatic growth or degrade indigenous biota. (Also see comment IV.B.1 in this letter.)
7. **Page 19. Biological Characteristics.** The Order should but fails to require marine community monitoring to verify that SONGS Units 2 and 3 do not degrade this community.

III. Orders Contain Significant Gaps in Information. Need for Clarification/Specificity

A. Attachment E: Fact Sheet

1. **Page E-4. Facility Description.** Provide full description of the locations, depth, structural details of all the outfalls (001,002,003,004, and 005) and all intakes. Scaled drawings should be included. Attachment A- SONGS Location Map and Facility Diagram do not adequately, nor accurately show the locations of the outfalls. The locations of the intakes are not shown.

2. **Page E-8.** Plant drains uses the term in italics "Non-radioactive". Why italics? Does this mean that there is a possibility that the plant flows can be radioactive because radioactive matter spills? It is understood that the RWQCB does not have authority to regulate radioactive discharges. Nonetheless, this should be clarified here. The Discharge Prohibitions, C, prohibits discharge of radiological, chemical, or biological warfare agent or high level radioactive waste into the ocean.
3. **Page E-8.** Thermophilic digester is being proposed by SCE. Maximum flows of 0.010 mgd or 10,000 gpd. The fact sheet fails to provide sufficient details of the proposed digester including the types of matter and the maximum daily mass that can be digested. The digester presumably would generate methane gas. If so, the permit should address the amount per day and its disposal (burning?) and air quality impacts.
4. **Page E-8.** Concrete cutting discharge is not adequately described. The types of concrete such as reinforced concrete, the presence of trace metals and organic chemicals in the concrete cutting discharge should be described.
5. **Page E-16.** On November 24, 2003, the chronic toxicity measured in the combined discharge of Outfall 002 was 10 TUc, the effluent limit. The explanation states that the likely cause of the chronic toxicity was attributed to the intake, the ocean waters as the influent measured the same value. The fact sheet did not consider the possibility that the plant discharged toxic matter, which then dispersed to the intake during some period after the prior sample and before this sample was taken.
6. **Page E-16.** The section on low volume wastes from Unit 2 states that there was no flow from the thermophilic digester. However, as noted in comment on page E-8, the thermophilic digester is proposed. The fact sheet again refers to the thermophilic digester on page E-19 and on the page E-20. Explain these conflicting statements.
7. **Page E-36.** The statement is made that the Dm of 10 was based on observed waste flow characteristics. It is not stated that the Dm was based on simultaneous flows from both Units 2 and 3 given the close proximity of the two discharges. Referring to Figure 4 in the Monitoring and Reporting Program, the outfalls for Units 2 and 3 are almost overlapping in the Y-axis and within approximately 250 meters apart in the X distance. The total zone of initial dilution for combined discharges should be given.
8. **Page E-40.** Chronic toxicity has a daily maximum of 11 TUc. Explain why the chronic toxicity monitoring frequency is quarterly as shown on Page E-42.

IV. Orders Fail to Adequately Require Sufficient Monitoring

A. Attachment E: Fact Sheet

1. **Page E-28. The *Proposal for Information Collection* sampling plan** should address the cumulative effects of the intake and discharges on the marine ecosystem. The plan should include sampling of the impingement and entrainment of benthic organisms, waterfowl, and marine mammals as well as fishes. The plan should include monitoring plan for sediment chemistry and benthic community taxonomy (infaunal and epifaunal) with samples taken within the zones of initial dilution and extending beyond to obtain far-field information for comparison. Intake and discharge velocities should be monitored. Hydrological information should be obtained determine current flow patterns caused by the intake and discharge flows.
2. **Page-42. Fish monitoring** should include changes in fish densities within 3 kilometers of the intakes. Compare the changes relative to control populations and from year to year. Influent monitoring of only fishes is not adequate. Benthic organisms, marine mammals, waterfowl, fish larvae that are impinged at the intake should be quantified; species and number per species. Fish return outfall should be sampled and marine life quantified by species and number per species.

B. Waste Discharge Requirements

1. **Page 18. Chemical Characteristics and Water Quality Objectives for Sediments.** Chemical Characteristics set water quality objectives for sediments. However, the Order fails to require compliance with these objectives by requiring sediment monitoring. Nutrient materials should be monitored (i.e., total nitrogen, biochemical oxygen demand) to verify that they do not cause objectionable aquatic growth or degrade indigenous biota.

C. Monitoring and Reporting Program

1. **Page D-4. Monitoring Locations.** Attachment 1, Figures 1, 2, and 4 are not adequate. Figure 1 is barely legible. The reader cannot obtain the exact locations of the continuous monitoring stations relative to the discharge locations. An expanded scale map showing the exact locations of C2S and F2S and the diffusers of each should be provided. The reader can then determine distances from the temperature sensor to the diffusers. Figure 1 is useless to determine the distance of temperature sensor C22S to the outfall diffusers and a new map should be prepared to correct this deficiency.
2. **Figure 2, Otter Trawl Stations and Fish Population Study.** The figure is apparently a reduced size of the original figure and is not legible. Provide a figure sized to be legible that clearly depicts the locations of the items on the legend.

3. **Figure 4, Temperature Profile and Water Quality Measurement Stations.** Figure 4 is not acceptable because the size and scale does not allow the reader to determine the distances of the temperature and water quality stations relative to the outfall diffusers. Furthermore, it does not show the locations of the intakes for Units 2 and 3 and Outfalls 004 and 005. Replace Figure 4 with one that is clearly legible and with expanded scale maps of the monitoring stations that are in the vicinity of the outfalls and intakes. Knowledge of the locations of the temperature sensors is critical to determine compliance with the water quality objectives of the thermal plan on page 17 of the Tentative Order. The objectives are that discharges of elevated temperature wastes shall not result in increases of the natural water temperature exceeding 4°F at (a) the shoreline, (b) the surface of the any ocean substrate, or (c) the ocean surface beyond 1,000 feet from the discharge system. It does not appear from Figure 4 that there are sufficient numbers of temperature sensors located just beyond 1000 feet from the discharges to the east and west of the diffusers.

V. Separation of Orders for Each Unit Fails to Adequately Demonstrate Cumulative Impacts

Bay Council strongly opposes the separate Orders issued for Units 2 and 3. By separating the Orders, it is difficult to evaluate the cumulative impact of both Units on water quality. In addition, it fails to recognize the fact that the Units are both part of one power plant and that both plants discharge up to 2.4 billions of gallons per day of seawater.

Conclusion

Bay Council appreciates the opportunity to comment on these Orders. Due to the significant gaps of data and information in these current Orders, we are not satisfied that the current Orders will protect water quality, marine life, and beneficial uses in our waters. Neither does this tentative Order provide adequate information for the public or you the decision-makers to understand the impacts of your decision.

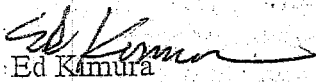
As a result, we strongly recommend that the Board defer any immediate action in the adoption of these deficient Orders until the significant gaps in key information regarding environmental impacts are included to justify its adoption, and the public has had a chance to review that information and provide their input to you.

To accomplish this, we recommend that the Board implement a phased approach to adopting this permit:

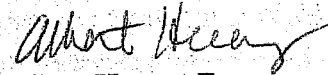
1. Direct the staff to bring back a second Tentative Order in 2 months after they have filled the gaps of information and provide justification for the action.
2. After the gaps are filled, allow an additional 30 day comment period for additional meaningful comments by interested parties before a vote by the board.

We think this is a reasonable schedule that can keep this permit on track and meet the legal obligations required under the law.

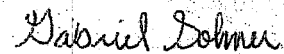
Sincerely,


Ed Kamura

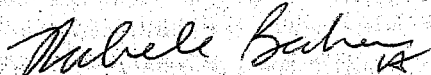
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